



October 16, 2013

Hon. John Quackenbush, Chairman  
Michigan Public Service Commission  
4300 West Saginaw Highway  
PO Box 30221  
Lansing, MI 48909

Mr. Steve Bakkal, Director  
Michigan Energy Office  
Michigan Economic Development Corporation  
300 North Washington Square  
Lansing, MI 48913

Dear Chairman Quackenbush and Director Bakkal,

The Michigan Energy Innovation Business Council (Mi-EIBC), a trade association representing advanced energy companies doing business in Michigan, offers the following comments in response to the draft report on renewable energy (Draft Report), issued September 20, 2013, as part of Governor Snyder's year-long process entitled "Readying Michigan to Make Good Energy Decisions." Mi-EIBC actively participated in the public forums held earlier this year, and these comments, like the data provided in April, rely on research commissioned by the Institute for Energy Innovation.

Mi-EIBC appreciates the thoughtful consideration of the data submitted regarding the integration of renewable energy into the state's power generation mix. The draft report is an excellent effort in presenting the complicated and jargon-laden topic of renewable energy in a clear and orderly way. We compliment the authors on the overall report.

## **I. Introduction**

Mi-EIBC's comments focus on three primary areas: the feasibility of integrating higher levels of renewable energy than was considered in the Draft Report; the applicability of the dormant commerce clause to the Michigan Renewable Portfolio Standard (RPS); and potential constraint on wind generation due to local zoning laws. In addition, we will separately submit a markup of the Draft Report to suggest a few areas where ambiguity or minor inaccuracies appear in the text.

We believe that the data support greater integration, and more accelerated integration, of renewable generation than was considered in the Draft Report. Specifically, IEI's analysis of the data sets provided to IEI by the Michigan Energy Office suggests that Michigan could increase the share of renewable energy within Michigan's power generation mix by 1.5% per year within the statutory cost caps included in PA 295, even



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in a 1.2% load growth scenario. In addition, such increases, even in the load growth scenario, could be achieved at 50% of the current cost caps through the year 2025.

In addition, we believe only minor tweaks are needed to address the constitutional concerns, and that concerns over zoning are perhaps overstated given the scale of wind deployment needed to achieve the renewable energy thresholds under consideration.

### **II. About Mi-EIBC/ IEI**

Mi-EIBC is a business trade association representing companies in Michigan's growing advanced energy sector. Mi-EIBC's mission is to grow Michigan's advanced energy economy by fostering opportunities for innovation and business growth and offering a unified voice in creating a business-friendly environment for the advanced energy industry in Michigan.

IEI is the not-for-profit partner organization of the Michigan Energy Innovation Business Council. The mission of IEI is to promote greater public understanding of advanced energy and its economic potential for Michigan, and to inform the public and policy discussion on Michigan's energy challenges and opportunities. IEI provides independent and unbiased research, organizes informational and networking events, and develops recommendations to spur public debate.

### **III. Feasibility of Achieving Higher Penetration of Renewable Energy within Current Statutory Cost Caps**

Mi-EIBC appreciates the Draft Report's framing of cost-feasibility of increasing the RPS to various levels subject to the renewable surcharge limits of PA 295 of 2008. One of the central findings of the Draft Report is that the current RPS could be increased by 1% per year through 2035, at which point utilities would obtain 30% of their total generation needs from renewable sources.

While we appreciate the analysis presented, Mi-EIBC notes that the 1% per year analysis included in the Draft Report actually represents a scaling back from the current rate of growth in the current RPS. Since the enactment of PA 295 in 2008, the pace of renewable generation deployment in Michigan has been approximately 1.5% per year. As such, Mi-EIBC recommends that an analysis of the current pace of growth also be presented to Michigan policy-makers to enable them to consider a faster pace of renewable implementation than the 1% per year increase used in the Draft Report.

By request to the Michigan Energy Office, IEI obtained the spreadsheet models of the cost-feasibility of various renewable portfolio standards used in preparation of the draft



report. Upon examination of those spreadsheets and after conferring with MPSC staff, we determined that the calculation of available revenue within the surcharge limits was based on outdated current surcharge data in the specific case of Consumers Energy. In MPSC case U-17301 subsequent to development of the report draft, Consumers Energy recognized that remaining costs for compliance with PA 295 are less than previously estimated and that the Company has consequently already collected surcharge revenue in excess of revenue requirement. Consumers Energy has therefore proposed to reduce future surcharges for all customers to zero.

In addition, we noted that in determining the revenue available for incremental RPS requirements within the surcharge caps, the surcharges for smaller secondary commercial and for industrial and primary commercial customers of Consumers Energy and DTE Energy were proportionally scaled down consistent with current actual surcharges used by those companies with MPSC approval. These reduced surcharges were adopted in the context of surcharges that are not limited by the surcharge caps, but the statutory caps are not scaled in this manner. Thus, to calculate the actual maximum available surcharge revenue, we eliminated these proportional reductions and set the available surcharge at the appropriate statutory values.

We then followed the practice used in developing the findings of the Draft Report and adjusted the proportion of renewable generation from wind to the minimum level consistent with the available revenue, except that in certain models wind was assumed to be 85% of generation. The tables below are copied from the spreadsheets and display the results of the analysis described above. These results clearly demonstrate that, using the framework and assumptions of the draft report, increasing the renewable portfolio standard at the rate of 1.5% per year is feasible to levels as high as 40% by 2035 subject to the surcharge caps of PA 295. These results also show that it is likely feasible to reach as high as 25% by 2025 with surcharge caps reduced by half but that goals beyond that could be challenging.

Model 1 assumes no load growth between now and 2035. Model 1 demonstrates that a 1.5% per year increase in the share of total electric generation derived from renewable resources is achievable over that time period within existing statutory cost caps:



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<b>Model 1: Base Scenario (No Load Growth)</b>							
Renewable Percentage	Wind Percentage	Wind Capacity MW	Solar Percentage	Solar Capacity MW	Biomass Percentage	Biomass Capacity MW	Incremental Renewables MW
17.5% by 2020	85.0%	1,868	7.5%	507	7.5%	101	2,477
25% by 2025	85.0%	3,737	7.5%	1,014	7.5%	203	4,954
32.5% by 2030	85.0%	5,605	7.5%	1,522	7.5%	304	7,431
40% by 2035	85.0%	7,473	7.5%	2,029	7.5%	406	9,908

Model 2 maintains the assumption of zero load growth between now and 2035 while maximizing generation from solar and biomass as compared to wind. Similar to the findings of Model 1, Model 2 demonstrates that a 1.5% per year increase in the share of total electric generation derived from renewable resources is achievable over that time period within existing statutory cost caps, even while maximizing non-wind resources:

<b>Model 2: Maximized Solar and Biomass (No Load Growth)</b>							
Renewable Percentage	Wind Percentage	Wind Capacity MW	Solar Percentage	Solar Capacity MW	Biomass Percentage	Biomass Capacity MW	Incremental Renewables MW
17.5% by 2020	40.0%	879	30.0%	2,029	30.0%	406	3,314
25% by 2025	70.0%	3,077	15.0%	2,029	15.0%	406	5,512
32.5% by 2030	78.0%	5,143	11.0%	2,232	11.0%	446	7,821
40% by 2035	80.0%	7,034	10.0%	2,705	10.0%	541	10,280

Model 3 maintains the assumption of zero load growth between now and 2035 and demonstrates that a 1.5% per year increase in the share of total electric generation derived from renewable resources is achievable over that time period even at 50% of the cost caps included in PA 295:



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<b>Model 3: 50% Base Scenario (No Load Growth)</b>							
Renewable Percentage	Wind Percentage	Wind Capacity MW	Solar Percentage	Solar Capacity MW	Biomass Percentage	Biomass Capacity MW	Incremental Renewables MW
17.5% by 2020	84.0%	1,846	8.0%	541	8.0%	108	2,496
25% by 2025	97.0%	4,264	1.5%	203	1.5%	41	4,508
32.5% by 2030	99.0%	6,528	0.5%	101	0.5%	20	6,650
40% by 2035	99.0%	8,704	0.5%	135	0.5%	27	8,866

Model 4 moves to an assumption of 1.2% annual load growth between now and 2035. Under this load growth scenario, we can continue to increase renewable energy by 1.5% per year within the cost caps included in PA 295:

<b>Model 4: Base Scenario (1.2% Load Growth)</b>							
Renewable Percentage	Wind Percentage	Wind Capacity MW	Solar Percentage	Solar Capacity MW	Biomass Percentage	Biomass Capacity MW	Incremental Renewables MW
17.5% by 2020	85.0%	1,960	7.5%	532	7.5%	106	2,598
25% by 2025	85.0%	3,919	7.5%	1,064	7.5%	213	5,196
32.5% by 2030	85.0%	5,879	7.5%	1,596	7.5%	319	7,794
40% by 2035	85.0%	7,838	7.5%	2,128	7.5%	426	10,392

Model 5 shows that we could maximize non-wind renewable resources like biomass and solar and increase renewable deployment by 1.5% per year within existing statutory rate caps, even with 1.2% annual load growth, though the penetration of non-wind resources would need to be slightly lower than the projections considered in Model 2:

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Model 5: Maximized Solar and Biomass (1.2% Load Growth)							
Renewable Percentage	Wind Percentage	Wind Capacity MW	Solar Percentage	Solar Capacity MW	Biomass Percentage	Biomass Capacity MW	Incremental Renewables MW
17.5% by 2020	43.0%	991	28.5%	2,022	28.5%	404	3,417
25% by 2025	73.0%	3,366	13.5%	1,915	13.5%	383	5,664
32.5% by 2030	80.0%	5,533	10.0%	2,128	10.0%	426	8,087
40% by 2035	81.0%	7,469	9.5%	2,696	9.5%	539	10,704

Finally, Model 6 shows that even with 1.2% annual load growth between now and 2035, Michigan could achieve 1.5% growth in renewable energy at 50% of cost caps through 2025, though continued growth at this pace would be difficult beyond 2025 without additional reductions in costs of renewable energy resources:

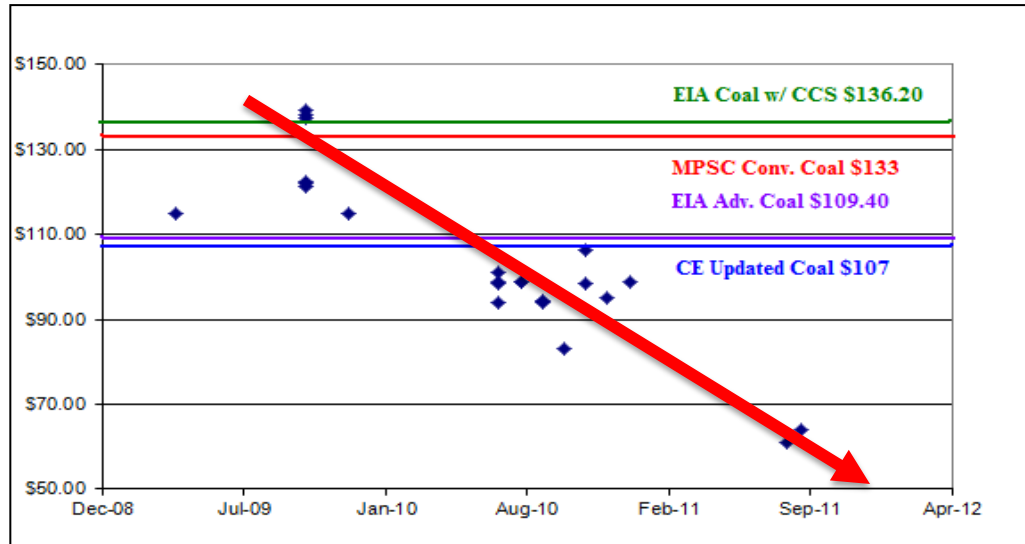
Model 2: 50% Surcharge Scenario (1.2% Load Growth)							
Renewable Percentage	Wind Percentage	Wind Capacity MW	Solar Percentage	Solar Capacity MW	Biomass Percentage	Biomass Capacity MW	Incremental Renewables MW
17.5% by 2020	88.0%	2,397	6.0%	503	6.0%	101	3,001
25% by 2025	99.0%	5,459	0.5%	85	0.5%	17	5,561
32.5% by 2030	Would require additional cost decreases	8,271	0.0%	0	0.0%	0	8,271
40% by 2035	Would require additional cost decreases	11,028	0.0%	0	0.0%	0	11,028

In calculating the feasibility of renewable energy growth in each of the six models presented above, IEI adopted the assumption contained in the Draft Report that renewable generations costs will remain at 2013 levels. The data suggests, however, that the costs of both wind and solar generation continue to decline and are expected by most analysts to continue declining for some time and by a considerable amount.



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The following chart, which Mi-EIBC included in its previous comments, highlights this trend. Each of the dots represents an actual signed power purchase agreement for new renewable electricity generation, while the various bars represent estimates by different parties for new coal-fired generation:



As such, the findings included above should be considered “conservative” in terms of the feasibility of continuing the current 1.5% per year pace of growth of renewable energy, and higher penetrations of renewable energy in Michigan are certainly possible.

### IV. Other Issues for Consideration

In addition to determining the feasibility of higher rates of renewable energy penetration than was considered in the Draft Report and the assumptions as to future costs of such renewable generation, Mi-EIBC also offers comments on two other issues raised in the Draft Report: the applicability of the dormant interstate commerce clause and the potential constraint on new wind due to local zoning restrictions.

#### A. Potential Constraint on Renewable Generation due to Application of Dormant Interstate Commerce Clause

The Draft Report suggests that challenges to Michigan’s renewable portfolio standard under the dormant interstate commerce clause of the United States Constitution may limit Michigan’s ability to achieve a higher renewable portfolio standard. This concern stems from a recent decision from the U.S. Court of Appeals for the 7<sup>th</sup> Circuit that included language calling into question the constitutionality of an in-state generation preference based on arguments made in that case.





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While the issues raised require a thoughtful policy response, the locational requirement in PA 295 was designed not to localize economic activity in Michigan, but to ensure that the power generated to meet the statutory requirements would be deliverable to Michigan and would thereby displace the need for fossil-fuel generation to meet Michigan's electricity requirements. In other words, the locational requirement is related to the unique peninsular geography and electric balancing areas of the state, and not, as the Court incorrectly asserted, the result of a constitutionally suspect desire to privilege Michigan over other states.

We therefore recommend that the final report identify that would be relatively easy to resolve this issue, by modestly rephrasing the locational requirement of PA 295 to clarify that the requirement is to ensure that the power is deliverable to Michigan. This can be done by making deliverability the principal locational requirement with a presumption that generation meeting the locational requirements of PA 295 satisfies this purpose and the possibility that sources in other locations can qualify with approval by the MPSC. Criteria for qualifying additional sources would then be the same as the locational requirements used by the Commission and MISO to determine whether a generation source contributes to satisfying reliability requirements for Michigan utilities.

### **B. Potential Constraint of Wind Generation due to Local Zoning**

Finally, the Draft Report suggests that an increased renewable portfolio standard might be made more difficult by local zoning requirements for wind turbines. We agree that this is a possibility and should be discussed in the report. However, we recommend that the report put this into context by comparing the required generation capacity to the overall potential in the State.

The development of Michigan energy policy is happening within a rapidly changing context of state policy development throughout the country. Michigan, like other states, has used a combination of mandates and incentives in its utility policies. Policymakers should therefore avail themselves of the comprehensive data available for comparing Michigan's energy optimization and renewable energy standards to that of other states.

By the various calculations included in the Draft Report's evaluation of the cost-feasibility of various renewable portfolio standards, expanding the RPS to 30% would require approximately 6,000 MW of wind capacity. This can reasonably be compared to the National Renewable Energy Laboratory's estimates<sup>1</sup> of Michigan's wind generation capacity as 39,000 MW at 100 meters hub height with capacity factor 35% or greater and more than 6,000 MW at 100 meters hub height with capacity factor 40% or greater.

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<sup>1</sup> Available at [www.windpoweringamerica.gov/docs/wind\\_potential.xls](http://www.windpoweringamerica.gov/docs/wind_potential.xls).





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These estimates were developed prior to recent advances in turbine design for medium wind conditions like those in Michigan, and should therefore be considered “conservative.” Against that backdrop, Michigan would need to tap just 15% of the total wind capacity identified by the National Renewable Energy Laboratory in order to meet fully 30% of its electricity needs from wind alone, and recent technological advances show even that percentage is likely too high.

### **V. Conclusion**

The Draft Report does an admirable job sorting through the various data presented and outlining the feasibility of significantly increasing the percentage of Michigan’s energy mix that is generated from renewable sources.

Mi-EIBC recommends that an analysis demonstrating the feasibility of higher rates of growth than those contained in the Draft Report be included in the final report, specifically including the models that suggest maintaining the current 1.5% per year renewable growth rate is also feasible. We also encourage the authors to reconsider their assumption that renewable energy costs are likely to stay at their 2013 levels, especially given the recent and dramatic cost declines in Michigan and elsewhere.

Finally, we encourage the report authors to make recommendations of minor changes to Michigan’s current locational requirement that could help insulate the law from legal challenge, and to provide additional context as to the percentage of identified wind capacity that would need to be developed in order to meet the renewable penetration levels identified in the Draft Report.

Mi-EIBC and its member businesses thank the report authors for the opportunity to provide these additional comments, and look forward to continuing to constructively engage as we build the dataset to inform Michigan’s energy policy discussion.

Sincerely,

Dan Scripps  
President  
Michigan Energy Innovation Business Council